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ABSTRACT

Two underlying assumptions of the Cultural Indicators approach to television research were examined, using data on the television viewing habits of 76 second grade, 150 fifth grade, 509 eighth grade, and 350 eleventh grade students in Perth, Australia. The assumptions were that commercial television presented an organically composed total world of interrelated stories produced to the same set of market specifications, and that television audiences viewed largely nonselectively and by the clock rather than by the program. The evidence on selection and habit in television viewing countered a "purely ritual" overstatement of the Cultural Indicators assumption. Two of the three content types most related to social reality (crime adventure and cartoons) were quite predictable from viewing habits. But habitual television watching itself did not account for all content-specific relationships, because viewing comedy and news programs related to other viewing habits without being related to beliefs about social reality. This evidence pointed to content differences (selection) as a key factor in television viewing even though habit could be considered an important antecedent to much of the viewing that produced the cultivation of a biased conception of the real world. Greater than average viewing times for cartoons and game shows were associated with perceiving the world as relatively mean and violent, while the reverse was true for drama and news viewing. (RL)

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Television Viewing and Cultural Indicators:

Some Notes on Theory and Measurement

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Television Viewing and Cultural Indicators:

Some Notes on Theory and Measurement

Recently, several articles (Doob & Macdonald, 1979; Newcomb, 1978; Wober, 1978) have criticized the Cultural Indicators research program (e.g., Gerbner, et al., 1979). The authors of these critical articles have raised questions about the theoretical basis of cultivation, methods used to test the cultivation hypothesis, and interpretation and generalizability of results of cultivation analyses. These critiques, and Gerbner's responses to some of them, have made Cultural Indicators a controversial research area. The present study represents an attempt to elaborate on some aspects of Cultural Indicators findings in order to test some basic assumptions of the approach.

Cultural Indicators research, as defined in numerous articles and papers by Gerbner and his associates, consists of two interrelated parts: Message System Analysis and Cultivation Analysis. Message Systems Analysis uses content analysis to locate patterns of action and population that might be viewed as symbolizing some further meaning. This technique thus can pick up the assumptions and value systems expressed in dramatic television content, as well as help identify symbolic messages in television content that are demonstrably different from what exists in the "real world." Using this discrepancy, Cultivation Analysis requires asking questions to determine whether viewers have incorporated these "television biases" into their own constructions of social reality.

In the most recent report of their television violence profile (Gerbner, et al., 1979), two assumptions underlying Cultural Indicators Research are clearly presented:

"One is that commercial television, unlike other media, presents an organically composed total world of interrelated stories (both drama and news) produced to the same set of market specification. Second, television audiences (unlike those for other media) view largely non-selectively and by the clock rather than by the program. Television viewing is a ritual, almost like religion, except that it is attended to more regularly." p. 180

We think that the first assumption can be more easily understood if it is rephrased and broken into two subassumptions: 1) uniformity of content and 2) the holistic nature of TV's symbolic messages. Because commercial television programming decisions can be shown to be at the mercy of a relatively small set of mutually compatible market, technological, and institutional constraints, it is assumed that the patterns of action and characterization that provide symbolic messages are directed by these constraints as well, thus also providing uniform symbolic messages. The causal link between such constraints and messages is quite plausible but has not been tested directly, although consistency of patterns of action across the spectrum of commercial television would provide considerable corroboration. However, the complexities of message systems analysis have limited the symbolic messages for which patterns have been demonstrated, so that work on the symbolic messages of violence is most advanced. Even here, while violence has been a theme throughout television since the Cultural Indicators group's monitoring began, it is worth noting that their reported frequency of violence does vary by network, time of day, and type of program. Other researchers have found differences in areas other than violence across types of content (e.g. Turow, 1974; Tuchman, Kaplan and Davids, 1978).

However, even if there are differences in symbolic messages within commercial television, the second subassumption of the holistic nature of TV's messages combines with the "ritual viewing" assumption to argue that such differences are unimportant. By "an organically composed total world," Gerbner, et al. mean that symbolic messages derive not from single incidents, but only from patterns of action that are the sum total of all television presented, or more relevant for the study of cultivation, all television viewed. Since symbolic messages can be defined only by patterns across multiple situations, it could scarcely be otherwise, so content or network or time of day variations in the patterns of action are irrelevant. This is especially so, since the "ritual viewing" assumption argues that television viewing is habitual and unselective. Thus, all viewers get the same symbolic messages, and the only variable is the amount of exposure to these messages.

Problems arise, of course, to the extent that these assumptions fail to hold. For example, if viewing behavior reflects selectivity as well as ritual, then not all viewers will see the same thing. If viewing differences exist, then the relevant patterns of action for symbolic messages lie not in the sum total of what is presented, but in the sum of what is viewed. And if differences in patterns of action do exist between types of programs, and if these mesh with any patterns of viewing, then quite different cultivations can occur within a single population, and total television viewed is not the only independent variable. In fact, it could even be a non-meaningful average. A heavy viewer could be selective enough to watch mostly crime adventure programs, getting an entirely different view of the world than a heavy viewer of family drama or situation comedies, although each watches the same total amount of television.

We consider both Cultural Indicators assumptions open to question. First, while we are inclined to agree about the impact of market, technological, and institutional constraints of commercial television, and believe that these constraints shape symbolic messages as well, we think it a mistake to overlook the implications of different formulas for patterns of action and thus symbolic messages as well. And while viewing certainly has a large habitual element, ratings differences and the prominence of television listings and program descriptions in print media argue for some forms of selectivity. Such selectivity could of course occur on any number of dimensions irrelevant to symbolic messages: actors, settings, etc. But if selectivity occurs on some dimension of programming that also locates differences in symbolic messages, perhaps formula, then this selection will result in different social realities.

Selective vs. habitual viewing by an individual is very hard to demonstrate. In the data presented below, we approach the problem through the aggregate, examining first the relative contributions of viewing different program types to cultivation, second the relative predictive power of total viewing and individual content types, and finally, as an indirect measure of selection, the relationship between conceptions of social reality and watching more or less of a given content type than expected based on an individual's total viewing and sample averages.

METHOD

Sample

Perth, the largest city in Western Australia, is a metropolitan area of around 800,000 people. It is served by two commercial television stations and one government-funded station.

In early October, 1977 (Spring), 1280 children attending public schools in white, working and middle class suburbs of Perth completed a questionnaire at their schools. Questionnaires were read out loud to large groups of fifth and eighth graders and to small groups of second graders (who were closely monitored by an interviewer), while eleventh graders read and completed the forms on their own. Two weeks later, a four-day diary of television viewing was obtained from 1085 of the original sample. Fifth, eighth, and eleventh graders completed the diaries in class Tuesday through Friday mornings with reference to the previous day's viewing. However, we asked parents of second graders to complete the diary for their child; this may have led to differences in the way the diary was completed, and certainly reduced the sample of second graders. Still, the final sample for which we had both a completed questionnaire and a viewing diary was 76 second graders, 150 fifth graders, 509 eighth graders, and 350 eleventh graders.

Measures

The questionnaire was lengthy and contained items assessing a variety of opinions, media beliefs and habits, and knowledge. Included in the questionnaire were two sets of items forming the dependent variables of this study. These items probed the extent of the children's television bias in their beliefs about violence in society and general meanness in the world. Each question was asked for Australia and, in a separate section later in the questionnaire, for America.

We used the format that Gerbner and his associates use for the questions about violence in society and we asked these questions of eighth and eleventh graders only. The questions and their responses were:

During any given week, what are your chances of being involved in some kind of violence?

TV About one in ten
 _____ About one in 100

What percent of all Australian (American) men who have jobs are police officers or detectives?

_____ About one percent
TV About five percent

Are most murders committed by strangers or by relatives or acquaintances of the victim?

TV Strangers
 _____ Relatives or Acquaintances

What percent of all crimes involve violence, like murders, rapes, robbery, and assault?

_____ About 15 percent
TV About 25 percent

These questions cover discrete bits of information about the prevalence and nature of violence in society. As such, there is no particular reason why a person giving the tv-biased response to any one of these should necessarily also give the tv-biased response to any other. And in fact, answers to these four questions are basically unrelated (non-significant chi-squares for five of six pairwise comparisons), but in each case those giving the tv-biased answer watched more television (for three questions, the value of t was large; for the final question, 88% of the children gave the television answer and $t=1.32$, $p<.10$). Therefore, these questions were summed to yield an index of the number of television-biased responses having to do with violence in society.

For their Mean World index, the Cultural Indicators group has used three questions (Gerbner, *et al.*, 1977) forcing a choice between a "mean" and a "nice" answer. We attempted to obtain greater variability and finer distinctions of meaning by dividing each of those statements into its two parts and asking respondents to agree or disagree with it on a five-point Likert scale. The six statements were:

If they got the chance, most people would try to cheat me.

You can never be too careful in dealing with people.

Most of the time, people try to be helpful.

Most people can be trusted.

Most people try to be fair.

Mostly people are just looking out for themselves.

We had expected to sum these items into a single Mean World scale, but we first performed a factor analysis to check for possible multidimensionality. To our surprise the negatively-phrased and positively-phrased questions divided into two dimensions instead of loading at the opposite ends of one dimension. Furthermore, only the negative (or "mean") questions were related to television viewing ($r = .16$ vs. $-.03$ for the "nice" questions). Checking the two potential summed indices across grades, we did find evidence of simple response bias at second grade; intercorrelations within the "mean" and "nice" groups averaged $.22$, but the cross-correlations were only somewhat smaller at $.14$. Thus, for second graders, the distinction between "Mean World" and "Nice World" is very difficult to separate from simple tendencies to respond positively or negatively to the likert scales. For the three older grades, the positive correlations within the two scales contrast well with negative correlations across them. The positive correlations and the contrast between the two scales do increase with age, but the relationship of television viewing to "Mean World" and not to "Nice World" first appears at fifth grade and remains quite constant thereafter. Therefore, in all analyses that follow, we have examined only relationships for the index summed from the three "mean" questions; perceptions of a "nice" world do not seem to be a cultivation outcome.

This Mean World index is clearly not simply a response bias in answering these three questions. However, one can still raise validity questions about it. It could be these questions tap a suspiciousness of other people, a fairly specific set of attitudes having to do with other people and social relations.

On the other hand, they may tap an overall pessimism. We cannot at this point resolve this question, but we would point out that finding these measures related to television viewing is an important result in either case, possibly even more so in the latter case.

Children's viewing diaries from four school days were used to construct measures of exposure to different types of content. The amount of time in minutes spent viewing program types such as television news, situation comedies, crime adventures, dramas, game shows, and cartoons was recorded for each child, as well as the total minutes of television across the four days. Assigning programs to categories was unambiguous throughout the four days; the only potential problem is that our assignments may have still been too broad. For example, M*A*S*H and Happy Days are both comedies, but the nature and setting of that comedy is quite different. Similar problems exist within two other categories, drama and documentaries/public affairs, but these problems, if they are problems, should have the conservative effect of obscuring, rather than enhancing content-specific results.

The choice of a tv-diary measures of viewing from four days instead of average viewing over longer terms may seem strange for tests of the cultivation hypothesis. After all, the hypothesis proposes that long-term exposure to consistent message system patterns shapes beliefs about the world; surely television viewing during any period of a few days is irrelevant. However, we worried that estimates of average viewing would suffer from reliability problems, especially for estimates of viewing different program types. A four-day viewing diary should be more accurate, and the four-day period should begin to approximate long-term habits of viewing.

As a check on the diary, children were asked how often they watched each of seven different program types, and responded on a four-point scale ranging from "never" to "often." Except for cartoons ($r=.46$), correlations between the two forms of measurement were quite low and inconsistent (e.g., "how often" children viewed crime-adventure programs was equally related to crime-adventure and comedy,

as measured by the diary). However, while the two methods of measurement do not relate well to each other, viewing of the content types measured by the tv diary is much more related to the cultivation dependent variables, suggesting that the diary is also a better measure of long-term viewing habits than the averaging measures.

Similarly, we found the same or better relationships between the dependent variables and "total" television viewing when we used a grand total from the viewing diary than when we used a Cultural Indicators -like measure. We asked the children to indicate how much time they spent after 5 pm with TV on an average night. When we correlated "average night" viewing with the dependent variables, results showed the diary grand total to correlate about the same for "mean world" (.12 vs .11) and much better for violence in society (.25 vs .16).

Thus, while we may be missing some important viewing patterns through chance evenings out, etc., in both cases the viewing diary measures had more predictive validity than the more general recall measures that required some estimations.

RESULTS¹

Table 1 presents the cultivation correlations for total viewing and each of 10 independent types of television content. Because the amounts people view of different types of programs are not independent of each other (probably both because of similarity of gratifications and habitual viewing), an indicator of the independent contribution of each program type needs some sort of control for other viewing. For viewing of each content type, partialling on all other viewing seems to us to fill this need, since it removes from both content-specific viewing and the social reality variable all variance accountable for without that type of viewing. In other words, the partial correlations in Table 1 are taken to represent the independent contribution of varying content types.

While the relationships between viewing and social reality beliefs can only be indirect evidence of symbolic message differences between different content types, it is clear from Table 1 that differences do exist. Even within the Cultural

Indicators group's overall "dramatic programs" category, corresponding to our divisions of situation comedies, crime adventure, drama, and cartoons, the types are not uniformly related to the social reality measures, and the most parsimonious explanation must be that the symbolic messages presented in these program types are not uniform with respect to these two social reality beliefs. For example, viewing crime adventure programs predicts both Violence in Society and Mean World and cartoon viewing is related to Violence in Society but not to Mean World (perhaps elucidating what television industry apologists have been saying in defense of cartoon violence all along). However, situation comedies are only weakly related and serial dramas are essentially unrelated or even negatively related to these social reality beliefs. Viewing game programs (in this case Family Feud, offered nightly), is a further strong predictor of beliefs about Violence in Society, but not about Mean World, a reversal of what one might expect given the grasping but not violent nature of such shows. And viewing news content was unrelated to either Violence in Society or Mean World, although this Australian sample does not really speak to Gerbner's contention that news cultivates the same perceptions as drama, since violence and catastrophe are less salient and usually geographically removed from these Perth children.

The one other aspect of Table 1 that deserves comment is the general lack of significant coefficients in the Mean World column, while there are several moderately strong relationships that stand out in the Violence in Society column. Summing the squared correlations in the Mean World column gives an R^2 corresponding to a multiple correlation of .11, the same as that of Total Viewing, suggesting that the cultivation relationship for Mean World is fairly evenly spread across different types of content. For Violence in Society, not only are the relationships more tied to specific program types (further suggesting differentiation of symbolic messages), but the R^2 suggests a multiple correlation fractionally higher than that of Total Viewing (.27 vs .25), pointing to the possibility that Total Viewing may even be a misleading average.

A specific test of this possibility is presented in Table 2, in which the predictive power of Total Viewing and all the independent content types are compared directly.

Values of R^2 here cannot be compared directly to those in Table 1, since partialling on SES removes its covariation from both viewing and social reality measures, while entering SES first in multiple regression only removes its covariation from the social reality measures. Still, it is immediately obvious for both Mean World and Violence in Society that the amount of viewing specific content types adds more to R^2 than the total minutes of television viewing.² This fits well with our interpretation of Table 1: that cultivation relationships are attributable to some television content and not to others, and not to total television viewing per se.

However, it should be pointed out that the relative advantage of using content types over Total Viewing is so small as to be trivial for Mean World, reinforcing our earlier interpretation of the very similar coefficients in that column of Table 1. For Violence in Society, the picture is again quite different, with the individual content types accounting for enough additional variance to be quite important, when correlations in cultivation relationships seldom exceed .20 (see Hawkins & Pingree, 1979, for discussion of some systematic reasons these correlations are typically so low). Thus, for Violence in Society, and perhaps for other social reality beliefs as well, using total television viewing as a predictor probably produces consistent underestimates of the strength of the relationship.

While Tables 1 and 2 shed some light on the relative contribution of different content types to cultivation and argue for content-specific measures of viewing, they do not allow any examination of the habitual viewing assumption discussed earlier. Knowing what content is related to which views of social reality tells nothing about whether that content is viewed habitually or selectively, or habitually by some and selectively by others. We have no way here of demonstrating individual reasons for viewing, but several aggregate results cast some light on this issue. Table 3 demonstrates that crime adventure and comedy programs jointly account for 57% of total viewing, with music/variety and cartoons each accounting for another 9%, so that 75% of all viewing

is of programs within these four categories. And the relationships to total viewing are substantial even allowing for the part-whole artifact: 60% ($r=.77$) of the variance in crime adventure viewing is accounted for by total viewing, and about 40% ($r=.65$) each in comedy and cartoons, despite their different contributions to the total.

When the part-whole artifact is removed, correlations are substantially smaller of course, but begin to give an indication of the habitualness with which a given content category is viewed. That is, if we can predict viewing of any given content type from viewing all other content types, either the gratifications provided by content types are similar (and Greenberg, 1973; and Shugerman, 1979 among others provide evidence of differentiation), or else viewing that content type is simply part of the television habit.

Unfortunately, one cannot simply take all variation in viewing a given content type not explained by other viewing and call it selectivity. A great deal of that is surely simple random variation, and what selectivity is present may be for any of a multitude of individual or situational reasons.

Even given these caveats, the correlations for crime adventure and cartoons are quite high and suggest a large contribution of habit, especially for cartoons, where the time investment is much smaller than for crime adventure, making error a more important factor. Comedy is viewed just as much as crime adventure (so that error should be equivalent) but it is less predictable, suggesting a larger element of selectivity. Correlations for most other shows are quite similar for shows of a similar proportion of total viewing (viewing estimates for rarely watched types must be less reliable), although music/variety shows seem to be watched less habitually than game shows or dramas. The one real surprise must be the high correlation for television news, since conventional wisdom, reported gratifications, and other research on children's lack of use of television news would predict a very low correlation. However, in Perth at the time of this survey, the two commercial channels alternated news and a public affairs program against each other during the 6-7 p.m. hour, during which the public station presented either farm/country programming, a long-running, country-oriented serial,

or British soccer. Given the lack of competition, the high habitual use of television news is not surprising.

The results in Table 3 suggest, in sum, that habit plays an important role in viewing of at least some content types. For four of the ten types here, other viewing accounted for better than 10% of the variance, and for two of these other viewing accounted for better than 20%. However, while much of the remaining 80-90% is probably error, the remainder is so large that we suspect that even some small part of crime adventure and cartoon viewing may be selective, and some form of selection must be operating to produce the lower correlations for and differences among other content types.

Selecting to watch or avoid a given content type should be reflected in a child viewing either more or less of that content type than one would predict based on that child's total viewing. Table 4 provides an indirect test of the amount of such selectivity, based on the rather tenuous assumption that selecting to view or avoid a type of content might be related to social reality beliefs. Thus, Table 4 presents the correlations between viewing individual content types and the social reality variables, controlling for total viewing.

Because all variance attributable to habit or to shared gratifications has been removed, correlations here are considerably lower than in Table 1 for most content types. Crime adventure programs, the strongest single predictor when viewing was partitioned in Table 1, are not a significant contributor here: if any children select toward or away from crime adventure, we cannot document it here, since variation around predicted viewing is not significantly related to either social reality belief. On the other hand, children who watch more drama than predicted believe the world is somewhat less mean and violent than those who watch less than predicted, and the same relationship holds between selection of music/variety and news and Violence in Society. In contrast, selecting more cartoons and game shows than predicted is positively related to Violence in Society. It is worth noting the contrast between cartoons and crime adventure here, since Table 3 demonstrates that cartoons are at

least as predictable from all other viewing. What Table 4 adds is that variations in cartoon viewing probably contain an element of selectivity as well, while crime adventure may be entirely habitual.³

DISCUSSION

In examining two assumptions that have been proposed to underlie the Cultural Indicators approach, this paper has presented evidence challenging both of them. The implication of isolating different cultivation relationships for different types of television content is that the symbolic messages about Mean World and Violence in Society vary from content type to content type, and are not uniform across commercial television, despite the market forces that presumably act uniformly on producers.

The implication for viewing measurement strategies in cultivation research is also clear: that breakdowns by content type are more useful than the less meaningful measures of total viewing, and that viewing diary methods seem preferable to either recalling the number of hours or checking one of several choices in response to a "how often" question. However, the extent of the advantages will have to be weighed by the individual cultivation researcher against the extra effort (considerable) of obtaining and using such measures. Our judgment is that the general statistical weakness of cultivation relationships (which we judge inevitable for reasons summarized elsewhere) makes the small added precision worthwhile. Still, one can ask just how far fractionalization of viewing should be pursued.

It would be possible to catalogue the components of symbolic messages in individual episodes, and by tracking individual viewing in detail, infer symbolic messages for individuals, but such exhaustive analysis is probably not practical for a long enough period to see social reality beliefs change. Doing the same sort of summations by individual series and viewing the series would be only slightly less tedious. However, the evidence here suggests that content types (as divided here) may be an important level of analysis for Cultural Indicators research. The formulas and conventions of the different content types--the strife and heros of crime adventure, the misunderstandings and embarrassments of comedy, the grasping idiocy and chance of game shows, the

event-centered definitions of news--all may cultivate different views of the world. We suggest that the next task of message systems analysis is to pursue content type differences, and consider these formulas and conventions for hypotheses.

The evidence presented here on selection and habit in viewing counters a "purely ritual" overstatement of the Cultural Indicators assumption, and provides a beginning toward evaluating the relative contributions of habit and selection. Two of the three content types most related to social reality (crime adventure and cartoons) are quite predictable from other viewing, suggesting that the omnivorous habits of heavy viewership are responsible for such viewing. However, habitual television watching itself (as an unmeasured third variable) cannot be posited to account for the content-specific relationships, since comedy and news viewing, almost as strongly tied to other viewing, are much more weakly or even negatively related to social reality beliefs. Again, our evidence points to the content differences as a key factor and not the habitual nature of viewing itself, even though habit is certainly an important antecedent to much of the viewing that does produce cultivation.

Turning to the notion of selective viewing of different content types--watching or avoiding comedy or news or cartoons, etc--the relationships in Table 4 give indirect evidence that such viewing does occur, although those correlations can show only that portion of selection related to social reality beliefs; selectivity may be much larger or present for more content types, but not be related to social reality. At any rate, viewing more cartoons and games than predicted from total viewing is associated with perceiving the world as relatively mean and violent; for drama and news the reverse is true. These relationships between selection and beliefs are not directly explainable with the data at hand, since the content type variable is not viewing itself, but only relatively high or low viewing for any given amount of total viewing. As classes of explanations, however, such selection-belief relationships should relate to the basic viewing-belief cultivation relationships either as third variables, where the reasons for selection are associated with other beliefs, or as interactions, where selection is associated with differential attention to and effects of a content type. Thus, selecting

cartoons may reflect attention to them rather than habitual viewing and minimal attention, so that the violence of the cartoons is more likely to be retained and used in constructing social reality. Or, selecting serial drama may reflect a preference for the different (and arguably more realistic) symbolic messages of drama based on beliefs in a less violent and mean world.

In sum, we find much to question in the two assumptions laid out by the Cultural Indicators group, but at the same time it should be clear that we do not think these assumptions are all that important to the approach. Even if patterns of events and characterization differ by content types, the task of inferring symbolic messages can and should proceed, since cultivation does occur, and can be differentiated by content types. And while a large part of viewing some content types does reflect habit, others seem much more selected, and some (e.g., cartoons) certainly contain both habit and selection.

While we think our findings will inevitably complicate Cultural Indicators research in the future, these elaborations and differentiations also provide support for some assumptions of the Cultural Indicators approach that are more basic and more important than those questioned here. First, the cultivation hypothesis suggests learning the symbolic messages of commercial television as the mechanism producing cultivation relationships. Despite a wide variety of psychological and demographic third variable controls, heavy vs. light viewer differences are always susceptible to an untested-third-variable explanation. Some characteristic of heavy viewers that distinguishes them from light viewers could easily account for cultivation differentials instead of the symbolic messages themselves. Here however, the contrasting relationships to social reality beliefs for content types seemingly equally habitual allow us to discard general heavy vs. light viewer differences, and bring cultivation much closer to the specific messages.

Second, any correlational analysis is always open to argument of reverse causation: that beliefs in a mean and violent world lead people to violent television for

confirmation, or simply to avoid the dangers of the streets. In the past, the response to such a criticism of the cultivation relationship has been to assert that the beliefs involved here are uniquely present in television, and could not be developed elsewhere--not a very convincing argument. In the present findings, however, crime adventure programs are the strongest individual contributor to social reality beliefs about a mean and violent world. Yet watching relatively more or less crime adventure than one's total viewing would predict is unrelated to such beliefs. As in previous work by Chaffee (Chaffee, 1972; Chaffee & Tims, 1976), the link through preference or selection is unsupported, leaving the viewing effects explanation more plausible.

Table 1
Correlations Television Viewing and Belief in Mean World
and Violence in Society

	Mean World	Violence in Society
Total Viewing	.11	.25
Television News	.04	-.03
Television Documentaries	.01	.01
Situation Comedies	.05	.06*
Crime Adventure Shows	.06*	.16***
Drama	-.04	-.01
Music/Variety	.03	-.02
Game Shows	.03	.14***
Cartoons	.00	.14***
Children's Shows	.00	.07*
Sports	.01	.02

Note: Because social class is related to total viewing and perceiving a "mean world" and other tested third variables were not (Hawkins & Pingree, 1979), all correlation here are partials on social class. Each correlation coefficient reported for a specific program type is also a partial correlation coefficient, with the total amount of viewing all other types of content partialled out.

*p<.05 **p<.01 ***p<.001

Table 2
 Increments to R^2 in Social Reality Measures
 Using Total Viewing or Content Types

	Mean World	Violence in Society
SES	.039	.020
Total Viewing	.019	.035
Total R^2	.058	.055

SES	.039	.020
All Content Types	.027	.055
Total R^2	.066	.075

Note: Entries are the R^2 or increments to R^2 in hierarchical regressions. For individual content types, residuals were calculated, as in Table 1, from total viewing of all other content. The residuals thus provide for partitioning Total Viewing into its component parts, while avoiding their co-variation.

Table 3
Relationships Between Total Television Viewing
and Viewing Content Types

	Average minutes in four days	% of total	Correlation with total	Correlation with all other viewing
Total Viewing	867	100%	—	—
News	63	7%	.47	.35
Documentaries, Public Affairs	45	5%	.36	.25
Comedy	245	28%	.65	.38
Crime adventure	247	29%	.77	.47
Drama	50	6%	.45	.30
Music/Variety	79	9%	.45	.29
Game Shows	42	5%	.41	.31
Cartoons	79	9%	.62	.48
Children's	11	1%	.25	.18
Sports	4	.5%	.06	.03

Table 4

Correlations Between Selective Viewing of Content Types and
Belief in Mean World and Violence in Society

	Mean World	Violence in Society
News	.02	-.07*
Documentaries/ Public Affairs	.00	-.03
Comedy	.01	-.03
Crime Adventure	.02	.05
Drama	-.06*	-.06*
Music/Variety	.01	-.06*
Game Shows	.02	.10**
Cartoons	-.02	.09**
Children's Shows	-.01	.05
Sports	.00	.01

Note: These correlations are partials both on SES and on total viewing. Thus, a positive correlation indicates that children who watch more of a given content type than predicted from their total viewing hold a stronger social reality belief.

* $p < .05$ ** $p < .01$

FOOTNOTES

1. Two previous papers have been based on this survey of Perth schoolchildren. Pingree and Hawkins (in press) deals with the contributions of American and non-American television to these children's perceptions of life in Australia and America. Hawkins and Pingree (1979) searched for processes involved in cultivation through subgroup differences, most notably grade, perceived reality of television, and media studies training. Because grade level is not of theoretical importance here, and previous findings were generally of a lack of cultivation in lower grades rather than qualitatively different relationships, the sample here will be treated as a whole.
2. The actual R^2 , rather than R^2 adjusted for the number of independent variables, has been used here. Because the viewing of content types not predictable from viewing other content types is simply a way of apportioning the total variance of television viewing (i.e., using the individual variables jointly to predict total viewing gives $R^2 = 1.0$), it seems unnecessarily conservative to use the adjusted R^2 for comparisons to the predictive power of Total Viewing.
3. Even though grade level was not an important partialling variable in the cultivation relationship, and replicating Table 1 at each grade produced few differences (Hawkins & Pingree, 1979), we replicated Table 4 at each grade level, since watching more of a content type than predicted from sample averages could simply reflect age trends in viewing. By and large the results for the overall sample are replicated at 2nd, 8th, and 11th grades, with some variation in the strength and significance level of the coefficients. Several reversals of these coefficients occur within the 5th grade subsample, but these will have to be pursued later.

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